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# Principled Principals? Voter Responses to Public Goods Provision

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**DEPARTMENT OF POLITICAL SCIENCE**

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# Abstract

Do voters in developing democracies reward incumbents for public goods provision? One of the basic assumptions of democratic theory is that voters use elections to punish and reward incumbents for their performance in office. However, many accounts characterize elections in developing democracies as being dominated by clientelism and vote buying, suggesting that voters do not base their vote on public service provision. This dissertation proposes a somewhat more optimistic picture. The results highlight that voters in developing democracies are willing to reward their representatives for effective public goods provision. However, the findings also suggest that societies can be trapped in an electoral equilibrium with low public goods provision because voters have pessimistic expectations about the effectiveness of public goods policies and are not able to attribute public goods outcomes to the efforts of their representatives. While pessimistic expectations lead voters to not reward incumbents for investment in public goods policies when outcomes are uncertain, failure of attribution leads to low electoral returns even for effective public goods provision. Policy instruments that assign responsibilities to politicians during policy implementation can increase attributability by enabling incumbents to credibly claim credit for public service provision or by making politicians' efforts observable to voters.

## Sammanfattning på svenska

Belönar väljare i utvecklingsdemokratier styrande politiker för tillhandahållande av samhällsservice och kollektiva nyttigheter? Ett grundläggande antagande i demokratiteori är att väljare använder val för att straffa och belöna politiker för deras prestationer. I litteraturen beskrivs val i utvecklingsländer ofta som att vara dominerade av klientilism och röstköp, vilket föreslår att väljare inte grundar sina röster på tillhandahållandet av kollektiva nyttigheter. Den här avhandlingen föreslår en något mer optimistisk bild. Resultaten betonar att väljare i utvecklingsdemokratier är villiga att belöna sina representanter för effektiv samhällsservice. Resultaten visar däremot att samhällen också kan vara fångade i ett "elektoralt ekvilibrium" med en låg nivå av samhällsservice, eftersom väljare har pessimistiska förväntningar vad gäller effekten av policy för att öka offentlig service och att de inte är förmögna att tillskriva goda resultat till sina representanters ansträngningar. Dessa pessimistiska förväntningar leder till att väljare inte belönar politiker för investeringar i allmännyttig politik när utfall inte är observerbara eller ovissa. Väljarnas oförmåga att relatera utkomster till politikernas ansträngningar leder till låg elektoralt avkastning, även för effektivt tillhandahållande av allmännytta. Policyinstrument som tilldelar ansvar till politiker under implementering, kan öka möjligheten att få väljarnas erkännande genom att göra det möjligt för de styrande att på ett trovärdigt sätt ta åt sig äran för tillhandahållandet av kollektiva nyttigheter eller genom att synliggöra politikernas ansträngningar för väljare.

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# 1 Introduction

In representative democracies, citizens delegate their ability to make political decisions to elected representatives. One justification for representative democracy is that elections are a means for citizens to constrain their representatives. By this logic, frequent elections allow citizens to punish or reward politicians for their performance in office (Key, 1966; Barro, 1973; Ferejohn, 1986; Fearon, 1999; Besley, 2006). In turn, politicians act to implement those policies that they anticipate their citizens to prefer. In theory, this should lead to better policies, greater public goods provision, and economic development (Besley and Burgess, 2002). The argument also has normative appeal because voters can use elections to “discern whether governments are acting in their interest” and ensure that “those incumbents who act in the best interest of citizens win reelection and those who do not lose them” (Przeworski et al., 1999, p. 40).

Idealized models of electoral accountability typically assume that voters reward politicians for improvements in public services (Besley, 2006). There is also strong evidence for retrospective voting in developed democracies (Fiorina, 1981; Lewis-Beck, 1990; Duch and Stevenson, 2008; Lenz, 2013; Huet-Vaughn, 2019).<sup>1</sup> However, many view clientelism and vote buying as pervasive in developing democracies, suggesting that citizens base their vote on the receipt of private goods (Powell, 1970; Scott, 1972; Kaufman, 1974; Bates, 1981; Kitschelt, 2000; Wantchekon, 2003). Thus, a key question is *whether voters in developing democracies reward incumbents based on the delivery of local public goods?* I address this question by first asking whether voters want public goods. Delving deeper, I study some of the underlying inferences of voters in relation to public goods provision. Do voters expect that public goods policies will be effective? Do voters reward incumbents who implement public goods policies? How does the role of politicians in policy implementation and adoption shape voter attribution and voting behavior?

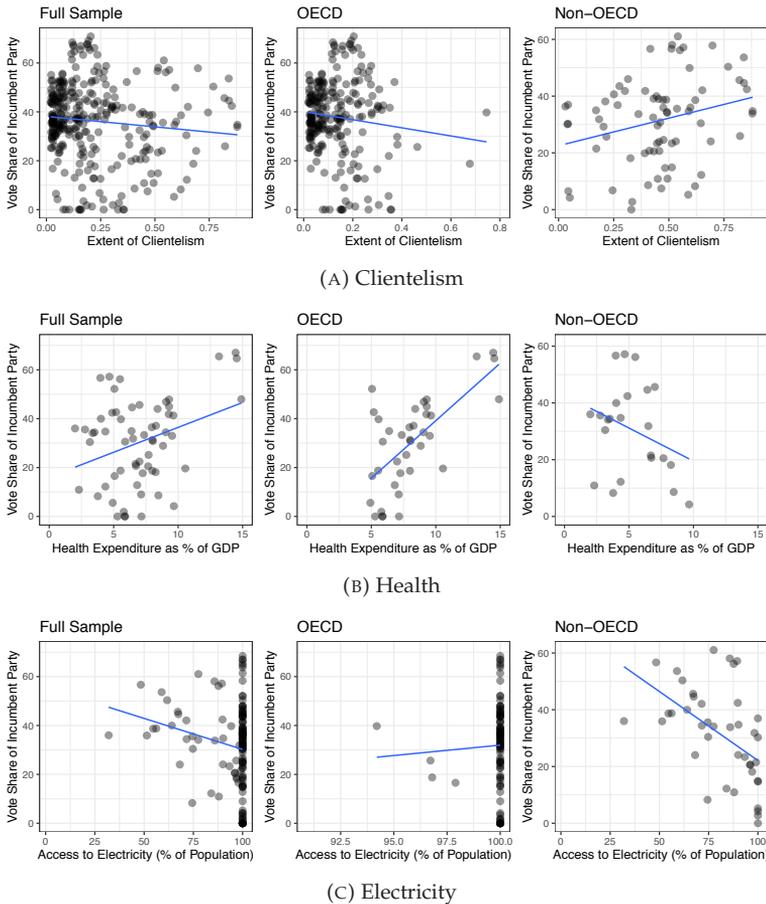
The general question as to whether voters create electoral incentives for politicians to improve public services is a central issue of political science. It has particular relevance in contexts that are dominated by clientelism and patronage. In this regard, the point of this dissertation is not that clientelism and targeted spending play no role during elections, but rather to explore the electoral rewards for politicians if they compete on public goods. If public goods create no electoral benefits for incumbents, politicians would have no incentive to adopt such policies in the first place. However, given that public goods yield welfare benefits for citizens, societies would be worse off in such a scenario.<sup>2</sup>

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<sup>1</sup>For divergent findings see Berry and Howell (2007) and Di Pietro (2019).

<sup>2</sup>See Khemani (2017) for a recent review.

FIGURE 1.1: Scatterplots: Clientelism and Public Services Provision (X) and Incumbent Party Vote Share in National Lower Houses (Y) 1970-2010.



Note: The Y-axis displays vote share of the incumbent party at year  $t$  (i.e., the party with the largest vote share in the previous election) in the lower house (Gerring et al. (2015)). The X-axis in panel (A) displays the extent of clientelism (Coppedge et al., 2020). The X-axis in panel (B), (C), and (D) displays measures of public service spending and provision at year  $t-1$  from the World Development Indicators, via Teorell et al. (2015). Data is matched on election year. Countries can occur multiple times in the data ( $N=314$ ). Data is subset to all democracies defined according to the V-Dem Polyarchy Index (values  $\geq 0.5$ ).

Consider the following motivating example. Figure 1.1 plots the correlation between public goods provision and incumbent voting using cross-national data from 1970-2010. The Y-axis displays the vote share of the incumbent party at year  $t$  (i.e., the party with the largest vote share in the previous election) in the parliament (lower house). The X-axis in panel (A) displays the extent of clientelism and panels (B), (C), and (D) display various

measures of public service spending and provision at year  $t-1$ .<sup>3</sup>

Taken at face value, the cross national evidence supports the notion in the literature that clientelistic goods can increase electoral benefits but public goods do not. In the full sample, clientelism has a modest negative association with incumbent voting. However, as we can see in the middle and right plot in panel (A) in figure 1.1, the negative trend only holds for OECD countries. In countries outside industrialized western democracies, the trend is reversed and, indeed, positive. Conversely, public goods provision in the form of healthcare spending (panel B) has a positive effect in OECD countries and a negative effect outside the OECD. The same pattern holds true for the provision of electricity (panel C) outside the OECD, whereas we find no association within the OECD. The latter is, however, not surprising since almost all countries within the OECD provide full access to electricity.

While illustrative, the inferences that can be drawn from this evidence are imperfect for several reasons. First, correlations do not necessarily imply a direct causal effect. Second, the data is composed of country averages. Thus, the question remains as to whether people living in countries where clientelism is strong vote on the basis of programmatic goods. Third, the measure of clientelism considers the degree to which politics is based on clientelistic relationships in the whole society, not only as an instrument for the incumbent. Fourth, in many developing democracies, service provision is decentralized. While part of the budget for public services comes from central governments, local governments are responsible for raising local taxes, allocating resources, and implementing public services. Therefore, it is not ideal to only measure the vote share of the national incumbent.

Consequently, this dissertation examines public goods provision through the lens of local politics in decentralized settings. The study of local performance is useful for several reasons. First, citizens typically encounter service provision in their local surroundings, observing infrastructure development, the quality of healthcare and education, or the state of the local economy. Therefore, evaluations of government performance might be particularly influenced by local conditions. Second, the focus on local performance allows for large variation of sub-national units (e.g., villages or municipalities) by keeping other factors (e.g., national institutions) constant.

## Arguments and Contributions

Only in the last two decades have scholars started to explore the electoral effect of local public goods provision using subnational variation in developing democracies. Typically, research in the field starts from theories of electoral accountability, assuming that voters are able to observe performance signals (politician's efforts to provide public goods, public goods outcomes, or a noisy signal from both factors), update their beliefs about the quality of politicians, and reward them accordingly (Fearon, 1999; Besley, 2006). As a result, voters may use elections to reward politicians for investment in public services. However, the empirical literature has produced mixed evidence. Studies have found positive, negative and null effects of public goods provision on incumbent voting (Weghorst and Lindberg, 2013; Harding, 2015;

<sup>3</sup>The patterns are robust when including predictors at time  $t$ .

De Kadt and Lieberman, 2017; Goyal, 2019; Boas, Hidalgo, and Toral, 2021; Croke, 2021). Recent studies largely explained this divergent evidence by three factors. First, voters might simply lack sufficient information about public service provision to inform their voting decision (Pande, 2011; Dunning et al., 2019a). Second, voters in developing democracies might prefer targeted private goods over the provision of public goods. A third line of research suggests that performance information alone is not sufficient: voters might also struggle to correctly attribute the responsibility for public goods policies and outcomes to the efforts of politicians (Mani and Mukand, 2007; Harding, 2015).

While this recent literature has made a valuable contribution, I suggest that these explanations are incomplete. Building on the previous research, this dissertation shows that voters want effective public goods provision and reward it if given the chance, even in contexts in which clientelism and vote buying are widespread. However, my findings also suggest that societies can be trapped in an equilibrium in which voters do not reward public goods provision because they have pessimistic expectations about the effectiveness of public goods policies and are not able to attribute public goods outcomes to the efforts of their representatives.

First, what is commonly overlooked in the literature is that voters often encounter situations in which they observe efforts towards public goods provision but policy outcomes are uncertain. In these situations, voters have to rely on their expectations as to how policy efforts will translate into outcomes. I argue that voters in developing democracies hold pessimistic expectations about the effectiveness of public goods policies. As a consequence, voters value efforts to implement public goods policies less than efforts to implement private good transfers. However, if public goods policies can be shown to be effective, most voters value them similar to private goods provision.

Second, I argue that the low public goods equilibrium described can be sustained by negative economic shocks. In particular, economic shocks can increase the demand for private goods vis-à-vis public goods. That is, relative – rather than absolute – changes in income can increase the marginal utility from private goods consumption. As a result, a subset of voters may be more likely to prefer candidates who provide private transfers over those who provide effective public goods.

Third, previous work did not consider what makes policy instruments more or less attributable for voters. In particular, the literature does not consider how the role of politicians in policy implementation and adoption can structure attribution. I argue that the role of politicians during policy implementation can reveal new information about the quality of such politicians and thereby influence voting behavior. In such a scenario, voters interpret the signals they receive from incumbents during implementation as credible and update their beliefs about their quality. However, increased attributability does not necessarily imply increased accountability. When the responsibilities of politicians during implementation are clear, voters are able to observe their efforts and are able to reward them accordingly. However, when such responsibilities are not clear to voters, incumbents have an incentive to claim credit for positive public goods outcomes and efforts regardless of their

actual actions because voters are not able to verify these claims. As a consequence, voters reward the incumbent for the mere reporting of actions. Thus, the effect of public goods provision on incumbent voting depends on (a) the opportunity for incumbents to signal their quality during policy implementation and (b) on the clarity of their responsibilities during implementation. Similarly, if incumbents did have a role in policy adoption but the responsibility for performance outcomes is shared among multiple levels of government, voters may use performance outcomes to make inferences about the quality of incumbents and punish them for negative performance outcomes.

### **Organization of the Dissertation**

The dissertation proceeds as follows. Section 1.1 introduces the reader to the main theoretical and conceptual basis linking public goods provision and incumbent voting: retrospective voting and political agency. It defines the primary independent variable, performance, in terms of public goods provision. The section also introduces the argument as to how performance voting might break down in contexts of weak democratic institutions and widespread clientelism. Section 1.2 provides empirical evidence on the average causal effect of public goods policies and service outcomes on incumbent support. Section 1.3 identifies three conditioning factors in the literature that serve as a point of departure to define the gaps in the literature: *access to performance information*, *voter preference and beliefs about performance*, and *voter attribution of performance*. Based on the review of the empirical literature and conditioning factors, section 1.4 identifies the research gaps this dissertation seeks to fill. Section 1.5 will discuss how the papers fill these gaps and answer the questions posed.

## **1.1 Theoretical Framework**

The dissertation examines the conditions under which we can expect voters to use elections to reward incumbents on the basis of local economic performance and their success in delivering broad-based public goods (with an emphasis on the latter). Thus, the dissertation does focus on the perspective of voters, especially in terms of their preferences and expectations, as well as the institutional and inferential constraints they might face when making electoral decisions.

This chapter clarifies the dissertation's key concepts, its relationship to the existing literature, and the contributions it seeks to make. The chapter is divided into three parts. To develop the argument, I first review the theoretical literature on electoral accountability with particular reference to retrospective voting and political agency models. In reviewing the literature, I focus on the perspective of voters. To conceptualize the independent variable, performance, I follow the literature on distributive politics and distinguish local public goods provision from individual, clientelistic transfers. The main outcome variable of the dissertation is incumbent voting. Lastly, I identify reasons why performance based voting might break down.

### 1.1.1 Performance Based Voting in the Literature

The literature on performance voting has a long history in political science. The earliest argument was perhaps formulated by James Madison in the Federalist Papers:

*“The aim of every political Constitution is, or ought to be, first to obtain for rulers men who possess most wisdom to discern, and most virtue to pursue, the common good of society; and in the next place, to take the most effectual precautions for keeping them virtuous whilst they continue to hold their public trust. [...] As it is essential to liberty that the government in general should have a common interest with the people, so it is particularly essential that the branch of it under consideration should have an immediate dependence on, and an intimate sympathy with, the people. Frequent elections are unquestionably the only policy by which this dependence and sympathy can be effectually secured.”*  
(Publius, 1788)

Fundamentally, we can conceptualize the relationship between voters and politicians as a principal-agent problem, in which voters (as principals) delegate the responsibility to take political decisions to politicians (as agents). Recognizing that politicians might not always work in the best interest of voters and pursue their private interests, elections are thought to serve a double function: they should enable voters to select the most skillful candidates and also keep their behavior in line with voter preferences by enabling voters to sanction them once they are in office.

The earliest modern treatment of performance voting goes back to the literature on *retrospective voting* in the literature on political behavior, mainly developed in the context of the US and western Europe (Key, 1966; Kramer, 1971; Fiorina, 1981; Duch and Stevenson, 2008). This literature perceives of elections as a device for citizens to punish or reward politicians for past performance. Thus, the key parameter that influences vote choice is incumbent past performance. Citizens’ utility may include pocketbook (individual wellbeing) or sociotropic considerations (public wellbeing) (Fiorina, 1981; Kinder and Kiewiet, 1981; Ansolabehere, Meredith, and Snowberg, 2014; Healy, Persson, and Snowberg, 2017). The reasoning of voters is observational: voters observe the actions and/or outcomes (signals) of incumbents and re-elect them if they pass a performance threshold. As a performance threshold, voters might compare current to previous welfare outcomes. In the words of Fiorina (1981, p. 5): *“In order to ascertain whether the incumbents have performed poorly or well, citizens need only calculate the changes in their own welfare.”* The same principle applies to communal or national economic outcomes (sociotropic voting).

Simultaneously, political scientists and economists working in the tradition of political economy have developed similar arguments. Going back to the seminal contributions of Barro (1973) and Ferejohn (1986), this stream of literature formalized the idea of voters sanctioning politicians for their performance in office under the idea of *moral hazard*. Moral hazard models assume that voters observe policy outcomes but lack information about the actions of politicians, e.g., how much effort they have provided in implementing a certain policy (hidden actions). Politicians, on the other hand, can

influence governance outcomes by taking costly actions or gain private benefits from shirking (rent extraction). Thus, the central idea of this model is that voters can use elections to incentivize politicians to take costly actions to increase welfare outcomes. In addition, elections can also be perceived as a screening mechanism to select the best candidates (Fearon, 1999; Besley, 2006). The selection mechanism is concerned with differences in the underlying quality (e.g., adopting good policies, implementing policies well) of the incumbent ( $\theta_1$ ) and challenger ( $\theta_2$ ) (hidden qualities). The idea is that an incumbent selects a unidimensional policy (for example, a level of public goods provision) that influences voter welfare. Voters observe a performance signal  $s$ , update their expectations  $\mathbb{E}$  about the quality of the incumbent, and elect them if their performance exceeds a certain threshold  $t$  (Ashworth, 2012, p. 187):<sup>4</sup>

$$\mathbb{E}(\theta_1|s) - \mathbb{E}(\theta_2) \geq t \quad (1.1)$$

Retrospection is one means by which voters form expectations about types of politicians. In this regard, past performance is instrumental because it can *signal* the quality of the incumbent. This dissertation assumes that voters who are concerned with their welfare will not only focus on the past performance of candidates but will also use past performance as a signal of how likely it is that a candidates will enhance their welfare in the future.<sup>5</sup>

### 1.1.2 Defining Performance as Public Goods Provision

When asking under what conditions citizens vote based on politicians' performance, we are required to define what we mean by performance. The empirical literature in the tradition of retrospective voting often evaluates performance in terms of *outcomes* such as individual income, local economic development, or some type of GDP (Fiorina, 1981; Duch and Stevenson, 2008). While economic development is certainly an important task for government, this definition of performance would miss a substantive part of the quality of life (Sen, 2001; Besley and Ghatak, 2006). For example, two sets of municipalities (and the voters within them) can have the same level of economic development but very different standards of living because they have different access to public sanitation, healthcare, or education. Political agency models use a wider definition of performance: the *policy efforts* and *qualities* of politicians that increase voter welfare (Besley and Ghatak, 2006). This definition would include policy efforts to adopt or implement public goods programs.<sup>6</sup> Similarly, the literature on distributive politics makes a clear distinction between *programmatic* and *non-programmatic* performance (Kitschelt

<sup>4</sup>Higher values of  $t$  might capture an incumbency disadvantage.

<sup>5</sup>Laboratory experiments suggest that people do indeed act on both dimensions (Landa, 2010; Woon, 2012; Feltoich and Giovannoni, 2015). One underlying assumption is that there is a minimum amount of political competition. That is, the incumbent must face one or more challenger(s).

<sup>6</sup>Qualities are sometimes also referred to as competence and are defined as any trait that voters value positively regardless of ideology (Dal Bó and Finan, 2018; Stokes, 1963). Besley et al. (2017) use a more stringent definition of quality, suggesting any cognitive and non-cognitive skill that influences the ability of policy-making. Thus, quality is not only defined in terms of outputs. Rather, any trait (not necessarily observed) that could contribute to any part of policy-making can be seen as a quality trait of politicians.

and Wilkinson, 2007; Stokes et al., 2013). Accordingly, a policy effort is programmatic if the allocation of goods is based on publicly stated rules (for example, relating to those who meet a certain poverty threshold) and incumbents have no discretion in delivering benefits.<sup>7</sup> While providing an element of conceptual clarity, the definition has some drawbacks, one of which is the degree to which programmatic rules are publicly known and subject to actual or perceived capture. A policy might be formally – and even factually – programmatic, but voters might perceive it as “pork” spending in the sense that they subscribe its allocation to the actions of a politician. As a consequence, any empirical evaluation would have to measure citizen’s beliefs about the allocation rule. Therefore, this dissertation defines performance as local public goods provision. In doing so, I follow an argument by Bardhan et al. (2020) who state: *“Being non-excludable, public benefits cannot be used as a clientelistic instrument by political parties or candidates.”* I define the term “public good” as any good that is publicly provided and locally non-excludable.<sup>8</sup> I use this definition because the dissertation is mainly concerned with local public goods that could be rival. In particular, local education (schools and supply), healthcare (clinics and supply), disaster prevention (wharfs, dams), and access to sanitation and heating. Arguably, these goods are non-excludable in the local context. However, these goods might be rival in the sense that resources are finite and different citizens compete for goods. Accordingly, I assume performance voting to work if voters reward incumbents who invest effort to implement local public goods policies and increase local public goods provision.

### 1.1.3 Why Does Performance Based Voting Break Down?

In contrast to theories about retrospective voting, it is a common assumption that elections in developing democracies revolve around the supply of particularistic goods by politicians in exchange for votes (Kitschelt, 2000; Wantchekon, 2003; Keefer and Khemani, 2003; Stokes, 2005). Instead of delivering programmatic public goods to voters, candidates may target goods to a subset of voters or provide private transfers in exchange for votes. A large empirical literature supports the importance of vote buying during elections, finding that voters in developing democracies vote on the basis of private goods provision, often in the form of cash, gifts, or private access to public goods (Powell, 1970; Scott, 1972; Kaufman, 1974; Bates, 1981; Hicken, 2011; Hicken and Nathan, 2020). What separates clientelism from public goods distribution is its contingency or “quid pro quo” mode of distribution (Hicken,

<sup>7</sup>Some authors go one step further and define programmatic policies as those that are non-partisan, i.e., those policies that are supported across party lines (Imai, King, and Rivera, 2020a). I argue that a policy can be programmatic even if it has a partisan intent.

<sup>8</sup>Because these goods are non-excludable for a subset of the population (for example, those who are eligible or live within a catchment area), they are sometimes referred to as club goods or collective goods (Buchanan, 1965). Samuelson (1954) uses a stricter definition and defines public goods as all those goods that are non-excludable (individuals cannot be excluded from consuming them) and non-rival (one individual’s use of the good does not reduce availability to others).

2011). Voters are expected to vote for politicians if they receive a private benefit.<sup>9</sup>

When evaluating the performance of politicians, voters might also interpret performance signals according to their *identities* (Achen and Bartels, 2017) such as religion, caste, clan, race, or language (Eifert, Miguel, and Posner, 2010; Dunning and Harrison, 2010). This set of theories assumes that voters select politicians if they match their own identities. Indeed, a large literature from developing democracies has found that ethnic or family identities can shape voting behavior (Horowitz, 1985; Chandra, 2007; Cruz, Labonne, and Querubin, 2017). Identities can also simplify the informational problem for voters by providing them with cues about candidates' preferences. In this dissertation, I acknowledge the role that ethnicity or identity in general can play in structuring vote choice, both directly and in interacting with performance. For example, the findings from Ferree (2006) suggest that poor performance can be mitigated through co-ethnicity. Similarly, Adida et al. (2017) show that voters are more likely to reward good performance if the incumbent is a co-ethnic and are more likely to punish bad performance if the incumbent is not a co-ethnic. Voters may also rely on party identities or endorsements to infer candidates' preferences and make their vote choice (Lupia, 1994). These predictions, however, often arise in models in which politicians can commit to future policies. This dissertation is concerned with contexts in which politicians cannot make these commitments, where parties are not organized around political cleavages, are programmatically weak and party switching of candidates is common (Walle, 2003; Hicken, 2015). Therefore, we cannot take for granted that party labels work as a proxy for future welfare outcomes.

Rather than voting on the performance of politicians, voters might vote on political issues. The literature on *issues voting* assumes that voters respond to policy proposals by politicians during election campaigns. Put differently, this approach perceives of elections mainly as a tool for citizens to select future policies.<sup>10</sup> The main task for politicians is to represent the issue preferences of voters once they are elected (Hotelling, 1929; Downs, 1957; Ansolabehere, Rodden, and Snyder, 2008). However, in this dissertation I mostly rely on data from two young democracies (Malawi and The Philippines) with weak parties and local election campaigns that are rarely centered around distinguishable issue-positions (Rakner, Svåsand, and Khembo, 2007). Political competition is less organized around programmatic platforms and more connected to ethnicity (Posner, 2004; Ejdemyr, Kramon, and Robinson, 2018) (Malawi) and family clans (The Philippines) (Querubin, 2016; Cruz, Labonne, and Querubin, 2017). If party cues or ethnic identities are

<sup>9</sup>The individual exchange of private goods (or private access to public goods) for political support is referred to as *clientelism* (Kaufman, 1974; Powell, 1970). The set of benefits might also include public jobs, called "patronage" (Weingrod, 1968). The discretionary and targeted distribution of benefits for a subset of voters in exchange for political loyalty is sometimes referred to as *pork barrel* or "favoritism" (Ferejohn, 1974; Shepsle and Weingast, 1981).

<sup>10</sup>In this sense, it is distinct from retrospective voting, which mainly focuses on past performance. Before elections, office-seeking politicians commit to policy platforms and compete for votes. Voters do not evaluate the performance or quality of candidates but instead compare their policy issue positions to the ones held by other candidates or parties.

important, the research designs in the dissertation will account for them in order to isolate the effect of performance on incumbent voting.

### Summary

The previous section defined and conceptualized the independent variable, incumbent performance, mainly in the form of public goods provision in terms of outcomes or policy efforts. It also defined the main dependent variables of the dissertation, incumbent support in the context of elections. In a nutshell, the theories of retrospective voting and political agency predict that voters should not only punish bad performance, but also reward good performance (Przeworski et al., 1999). Therefore, the theory predicts positive electoral effects for incumbents who provide public goods. In contrast, theories of clientelism predict that voters in developing democracies might only reward the provision of private goods. Therefore, we can expect null effects of public goods provision on incumbent voting. Building on these theoretical discussions, section 1.2 will use a meta-analysis to review the empirical evidence that is of central interest to this dissertation. In section 1.3, I discuss several conditioning factors (moderating and mediating variables) that have been proposed in the literature. Section 1.4 identifies open questions in these sub-literatures that the dissertation seeks to contribute to.

## 1.2 Evidence: The Effect of Public Goods Provision on Incumbent Voting

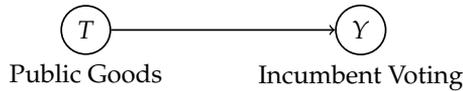
Equipped with the theoretical models of retrospective voting and political agency, the field has experienced a second renaissance during the last two decades. This trend coincided with the so called “credibility revolution” in social science: researchers employed better research designs, focusing on assumptions so as to give results a causal interpretation, increased standards for data transparency, and pre-registered study designs (Green and Gerber, 2002; Duflo, Glennerster, and Kremer, 2007; Angrist and Pischke, 2010; Miguel et al., 2014; Gelman and Loken, 2014; Dunning, 2016). Thus, the more recent research agenda sets out to study empirical implications predominantly through the lens of modern causal inference. Humphreys and Weinstein (2007), Olken (2007) and Ferraz and Finan (2008) are early seminal contributions to the larger field of electoral accountability, relying on field and natural experiments that can identify average causal effects under milder assumptions than previous work. Inspired by this work, a growing empirical literature in political science and economics studied the electoral effects of actual public goods policies on electoral behavior.

### 1.2.1 Meta-Analysis

To systematically review the evidence across studies, I conducted a meta-analysis (Shadish, Cook, and Campbell, 2002). In general, the goal of a meta-analysis is to synthesize scientific knowledge. I adopted a deductive approach, asking if the substantive mechanism predicted by the theory (public

goods provision should increase incumbent voting) is present in the empirical data or not (Slough and Tyson, 2021). Put differently, the main quantity of interest in the meta-analysis is a quantitative measure of the sign and size of the general causal effect of public goods provision ( $T$ ) on incumbent voting ( $Y$ ) as depicted in the Directed Acyclic Graph (DAG) (Pearl, 2009) in Figure 1.2.

FIGURE 1.2: Causal Directed Acyclic Graph



*Notes: The figure presents the hypothesized causal relations between the variables. Arrows between two nodes represent a causal relationship between two variables.*

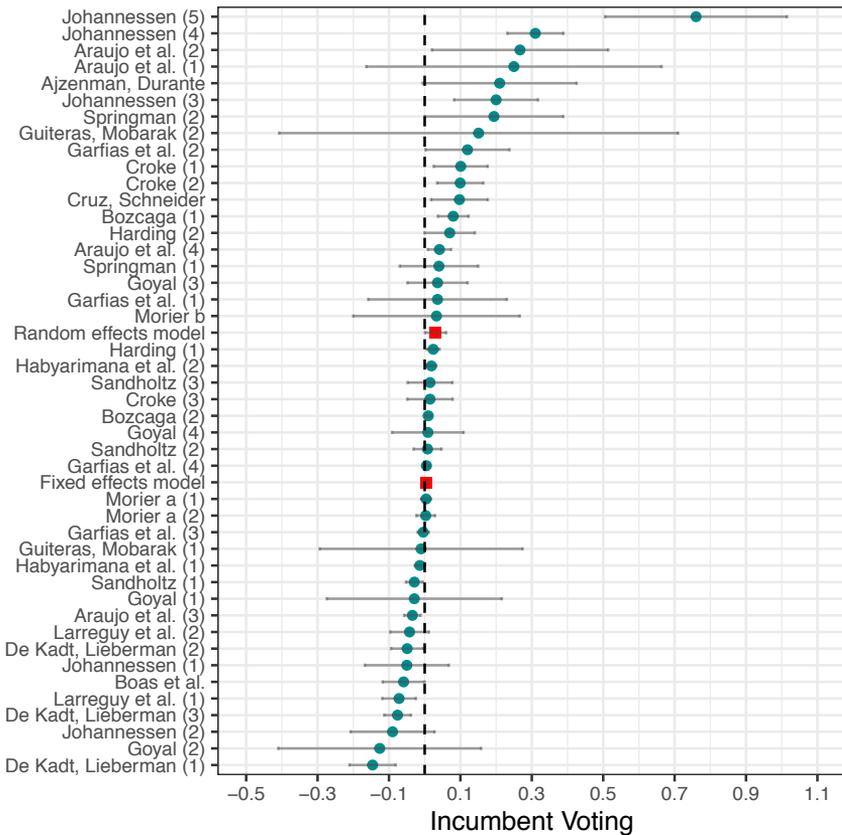
To create the universe of relevant studies included in the meta-analysis, I ran keyword searches on Google Scholar. First, my target population is low-and middle-income democracies in which elections are held and clientelism is widespread. Therefore, I included studies using data from developing democracies. Second, I included published articles, dissertations and working papers that conducted quantitative analysis in which public goods acted as the treatment (such as infrastructure, hospitals, schools etc.) and incumbent voting was the outcome.<sup>11</sup> In order to aggregate results across studies in a meaningful way, a meta-analysis has to ensure the comparability of the estimands of the included studies. In particular, studies should be harmonized in terms of treatment and control comparisons and measurement strategies (Slough and Tyson, 2021). Therefore, third, I applied a research design filter that only included experiments or natural experiments with plausibly exogenous variation in public goods. The treatment variable is either a public goods policy, public goods spending, or a public goods outcome.<sup>12</sup> This resulted in a total of  $N = 18$  studies. I collected point estimates, estimated standard errors, and the number of observations whenever they were explicitly reported in a paper. I included several results for each paper if the studies reported the results for multiple public goods and/or incumbents.<sup>13</sup>

<sup>11</sup>By including working papers and dissertations I intend to reduce the chances of publication bias.

<sup>12</sup>For details, see Appendix A.1. There are some prominent papers that are not included in the meta-analysis due to the design filter. For example, Weghorst and Lindberg (2013) studied swing voters in Ghana using observational survey data. The authors showed that both collective and clientelistic performance is associated with a lower likelihood of swing-voting during elections.

<sup>13</sup>For details, see Appendix A.1. The reader should note that the studies use slightly different treatments, outcome measurement strategies, and different scales for the treatment and outcome. By including different treatments and outcomes, I therefore invoke two assumptions: Ignorable Treatment-Variations and Ignorable Outcome-Variations (Egami and Hartman, 2020).

FIGURE 1.3: Forest plot of study estimates and meta-estimates (red) of the relationship between public goods provision and incumbent voting



Notes: 44 study-pooled treatment effects with associated 95% confidence intervals. The complete bibliography of the studies used can be found in the appendix.

## 1.2.2 Results

Figure 1.3 presents the results. The results from the meta-analysis do support the theoretical predication that public goods provision leads to electoral returns for incumbents. We can observe positive, statistically significant point estimates for both the fixed effects and random effects models (fixed effects: = 0.0049, p-value= 0.05; random effects: = 0.0306, p-value= 0.05).<sup>14</sup>

Because treatment, outcomes and measures are different, I abstained from inferences about effect sizes. Nevertheless, this could lead us to the conclusion that voters, on average, reward public goods provision in contexts in which clientelism and vote buying are prevalent. However, we can also observe substantial between-study heterogeneity ( $\tau^2 = 0.0070$ ,  $SE = 0.0019$

<sup>14</sup>The results remain robust when excluding the outlier from Johannessen (2019).

for the random effects model).<sup>15</sup> These results suggest that there might be conditions that foster public goods voting. Assuming the divergence is not caused by differences in treatments and outcomes across studies, these findings create a puzzle: what other factors could drive this heterogeneity? The heterogeneity does not seem to be driven by the type of good, mode of distribution, or level of government.<sup>16</sup> In the following, I concentrate on a set of moderating and mediating variables that are proposed by the literature.

## 1.3 Conditioning Factors

I suggest that we can rationalize these mixed findings if we integrate the extent literature about:<sup>17</sup>

1. voters' access to *information* about public goods provision
2. voters' *preferences* for and *beliefs* about public goods provision
3. voters' *attribution* of public goods outcomes to politicians

In particular, I suggest that each factor constitutes a necessary condition to link public goods provision and incumbent voting. In the following, I provide an overview of each mechanism, integrate each into the theoretical framework of retrospective voting and political agency, and subsequently discuss open questions. The dissertation focuses on mechanisms 2 and 3.

### 1.3.1 Access to Information

The most prominent explanation of why voters do not hold governments to account for public goods provision is lack of information on the part of voters. Voter information might concern events in the world (e.g., disasters, financial crisis), policy actions taken by elected officials (e.g., policy efforts), or subsequent outcomes (e.g., public goods provision, local economic development). Starting with the seminal works in American politics (Campbell A, 1960; Converse, 1964) there is some consensus that many voters are poorly informed about politics and the performance of politicians. This is particularly true in developing democracies, where many citizens often lack information about the actual performance of politicians and their responsibilities (Pande, 2011; Chong et al., 2015; Cruz et al., 2018). Over the last two decades, a set of field and natural experiments have explored the effect of information campaigns on voting behavior. Applied to the theoretical framework introduced above, recent studies were mostly concerned with increasing the quality of the performance signal that voters receive to form their expectation about

<sup>15</sup>I chose to report  $\tau^2$  because the measure is insensitive to the number of studies and their precision.

<sup>16</sup>For details see Appendix A.1.7.

<sup>17</sup>Needless to say, the list of conditioning factors is not exhaustive. For example, some authors have pointed out that voters might be subject to psychological biases when evaluating performance (Huber, Hill, and Lenz, 2012; Achen and Bartels, 2017). As mentioned earlier, ethnicity and identity could also moderate the effect. However, this is not the focus of this dissertation.

an incumbent's type. Typically, the treatment in these studies is information about the actual policy efforts and/or policy outcomes of an incumbent or incumbent party. The outcome is typically the stated or recorded vote choice during elections.

A majority of studies found that mere information about the performance of politicians is not sufficient to influence vote choice (Dunning et al., 2019a; Dunning et al., 2019b; Boas, Hidalgo, and Melo, 2019). However, a set of studies have identified some conditions under which voters do react to performance information: if the information is positive compared to voters' prior beliefs (Arias et al., 2018), if voters care about the information and believe others do so as well (Adida et al., 2020), if it is included in political campaigns (Kendall, Nannicini, and Trebbi, 2015), if they see that it is publicly disseminated through known channels such as local radio (Ferraz and Finan, 2008). In sum, the literature concludes that information about performance itself might be a necessary but not sufficient condition to change voter behavior.

### 1.3.2 Voter Preferences and Expectations

Voters might have access to performance information, but their decision on voting also depends on their underlying preferences. Put differently, do voters want public goods? Standard political agency models assume that voters value public goods policies and outcomes. However, a theoretical literature in comparative politics and political economy suggests that voters in developing democracies might prefer private over public goods. First, voters might derive more utility from private benefits than from public goods. This is more likely for poor voters because of the diminishing marginal utility from income: a unit increase of private benefits increases the utility of poor voters more than for wealthy voters (Dixit and Londregan, 1996; Weitz-Shapiro, 2012). Alternatively, poverty is thought to induce short-sightedness into voters' utility, leading them to forgo goods that need long-term investment while favoring the short-term goods typically offered in clientelistic exchanges. Thus, voters might discount benefits from public goods policies because they unfold over a long period of time. Second, voters might not reward public goods policies because they do not expect politicians will or can deliver them, i.e., they might not trust pre-electoral public goods promises (Kitschelt, 2000; Wantchekon, 2003; Keefer, 2007; Keefer and Vlaicu, 2008). As a consequence, voters would be less likely to reward public goods *promises* (Keefer, 2007; Keefer and Vlaicu, 2008). This argument suggests that this is more likely in young democracies in which politicians have not interacted long enough with voters to gain a good reputation (Keefer and Vlaicu, 2008; Khemani, 2015). As Keefer, Scartascini, and Vlaicu (2020) summarize the arguments: "*Voters prefer spending with certain and immediate benefits when they have low trust in electoral promises and high discount rates.*"

Despite the centrality of the issues, few studies measure preferences for incumbent performance.<sup>18</sup> A notable increase in such studies came about

<sup>18</sup>See Bratton, Mattes, and Gyimah-Boadi (2005) and Lindberg and Morrison (2008) for notable exceptions. Both accounts used survey evidence to show that African voters also base their vote choice on incumbent performance.

FIGURE 1.4: Causal DAG with moderator

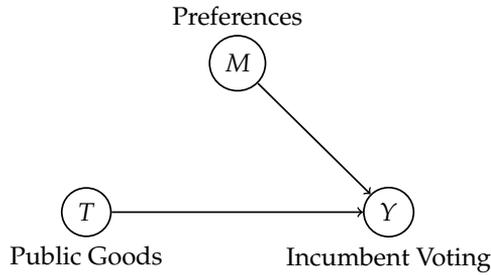


TABLE 1.1: Evidence: Conjoint Experiments: Performance Information and Stated Vote Choice

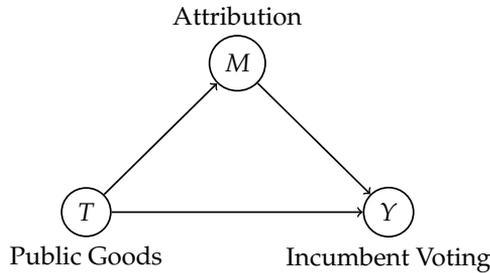
Study	Country	Type	Treatment	AMCE
Kao, Lust, and Rakner (2017)†	Malawi	S	Public Goods Promise	+0.11
Carlson (2015)†	Uganda	P	Public Goods Promise	+0.15
Mares and Visconti (2020)	Romania	P	Public Goods Promise	+0.07***
Weaver (Forthcoming)	Peru	P	Public Goods Outcome	+0.06*
Phillips (2017)	India	P	Public Goods Outcome	+0.93***
Carlson (2015)	Uganda	P	Public Goods Outcome	+0.25***
Gutiérrez-Romero and LeBas (2020)	Kenya	P	Public Goods Outcome	+0.03

Notes: †= no clean baseline; \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ ; S=Single Vignette, P=Paired; Performance refers to hypothetical scenarios with a candidate having a record of past performance in office. Promise refers to a future promise of a candidate.

with the recent rise of survey experiments studying voter preferences, in particular conjoint experiments (Luce and Tukey, 1964; Hainmueller, Hopkins, and Yamamoto, 2014). These experiments measure respondents' preferences for candidates and policies by asking them to evaluate two different candidates that vary on several policy dimensions. Table 1.1 summarizes the results from conjoint experiments that included a dimension of public goods provision where candidates provide public goods or make promises about future provision.<sup>19</sup> All studies found positive effects, but not all are statistically significant. In line with the predications from the theoretical literature on the commitment problems in developing democracies, we can observe that there is clear evidence that voters hold a weaker preference for pre-election promises pertaining to public goods. In general, however, and in line with models of retrospective voting, we can also see that voters have a strong preference for public goods outcomes. In sum, the low electoral returns relating to public goods delivery cannot be caused by the fact that voters do not want effective public services. However, we know less about the expectations that voters have about public goods policies. We saw that voters value promises less than outcomes, but would we see similar results for investment in public goods policies? Voters might value effective public

<sup>19</sup>For details on the papers, see Appendix A.2.

FIGURE 1.5: Causal DAG with mediator



service outcomes, but might be unsure if public goods policies are actually effective. The question is important because in many situations voters are not perfectly informed about outcomes, but only observe policy inputs.

### 1.3.3 Voter Attribution

A third mechanism that researchers focused on is voter attribution. Even if voters are perfectly informed about performance signals such as local public goods provision, voters may struggle with the correct interpretation. Applied to retrospective voting models, attribution problems concern how informative a performance signal is about the quality of politicians. For example, voters might receive information about the quality of public schools in their municipality. However, this outcome can be the result of efforts on the part of one politician, efforts on the part of several politicians, or simply luck. If two politicians can influence an observed performance outcome, a given signal is less informative about a politician's type compared to situations in which only one politician can influence the policy outcome. Additionally, voters might not hold the belief that the quality of public schools is the responsibility of a certain politician. Politicians might also actively try to influence voters' attribution by (deservingly or undeservingly) claiming credit for them. Compared to the focus on the provision of performance information, the comparative literature on developing democracies has paid little attention to this issue. By contrast, a large literature on political behavior in high income democracies (with a focus on the EU and US) has focused on attribution. The literature has identified three factors that can strengthen or undermine voter attribution: the clarity of responsibility for policies or policy outcomes, credit claiming by politicians, and policy design. I discuss each in turn.

#### Clarity of Responsibility

There is some degree of consensus in the literature that clarity of responsibility moderates the effect of outcomes on re-election decisions by voters (Powell and Whitten, 1993; Tavits, 2007; Duch and Stevenson, 2008). Clarity of responsibility is typically conceptualised as institutions that cause a special type of information asymmetry. Voters observe outcomes but are uncertain as to how they came about. That is, they are not able to identify the

agent(s) and action(s) that caused the realisation of an outcome. In general, low clarity of responsibility is “*expected to weaken the mapping from outcomes to re-election decisions by individuals*” (Besley, 2006, p. 105). Applied to the framework of performance voting, low clarity of responsibility undermines attributions and decreases the likelihood that voters update their beliefs about the type of incumbent. As a consequence, low clarity of responsibility is thought to induce null effects of performance on incumbent voting, whereas high clarity of responsibility should increase the link between performance and incumbent voting. Recent research finds evidence for the clarity of responsibility mechanism in developing democracies. Harding (2015) studied clarity of responsibility with respect to different types of public goods outcomes in Ghana. He found that voters rewarded the incumbent if a policy was highly centralized and the outcome clearly attributable to the political actions of the incumbent, but not otherwise. Relatedly, Mani and Mukand (2007) suggest public services are more visible than others, and voters are more likely to reward incumbents for the provision of visible public goods.

Correct attribution can be particularly challenging if *multiple actors* are involved in the provision of public goods. Research predicts that clarity of responsibility should decrease with an increasing number of involved actors. The evidence on the issue from developing democracies is slim. Martin and Raffler (2021) show that voters are less likely to interpret government performance as a signal for incumbent quality if they perceive that politicians have a limited capacity to control bureaucrats. Correct attribution of blame and reward seems even harder for voters when supra-national actors such as the EU are involved because multiple levels of government (local, national, and supra-national) are involved in policy adoption and implementation. Clearly, the EU also bears some responsibility because it provides some funding for local public goods and enforces policies that can influence economic outcomes.<sup>20</sup> However, there is no clear consensus about whether the EU as an institution is held accountable for the local economy or public welfare provision. Several studies have found that voters take the responsibilities of the EU into account when evaluating performance outcomes such as economic conditions (Hobolt and De Vries, 2016; Hobolt and Tilley, 2014). It is also established that national economic voting (holding national or local incumbents accountable for local economic conditions) is reduced if voters assign responsibility for the economy to the EU (Lobo and Lewis-Beck, 2012). One area in which the EU has a clear responsibility – especially in terms of policy adoption – is welfare policies. However, the literature on this question is scarce and inconclusive. Studies suggest that voters have problems connecting local public goods provision and the welfare outcomes provided by the EU. Schuessler (2019) studied the effect of the allocation of EU funds on subsequent support using public opinion data. The effects were relatively small and statistically insignificant. Contrarily, Borin, Macchi, and Mancini (2020) studied the effect of EU local transfers on individual attitudes towards the

<sup>20</sup>For example, the EU has responsibility over competition rules, commercial policy, external trade policy, and customs. During a crisis, the EU may also bail out member states in financial need, conditional on the implementation of certain policies (Bansak, Bechtel, and Margalit, 2021).

EU and found consistent positive effects on public support for the EU. Similar inconsistent evidence can be found in the literature on voting behavior in EU referendums, the most prominent case being the Brexit referendum. Conceptually, one may think about the vote choice in a referendum as a measure of incumbent support. In the study of Matti and Zhou (2017), local economic factors such as unemployment were not associated with vote choice in the Brexit referendum. However, Becker, Fetzer, and Novy (2017) found that low income and high unemployment were associated with the vote to leave the EU.

In sum, there is very lively and ongoing research on the debate regarding how voters attribute responsibility for local conditions to the EU and how this shapes voting behavior. However, as suggested by the review above, the research is far from conclusive.

### **Credit Claiming by Politicians**

The most prominent explanation for the positive effects found in the literature is the ability of incumbents to claim credit for public goods provision. That is, politicians could themselves try to influence voters' attributions. Several studies provide evidence for the mechanism. Harding (2015) reports that the incumbent president and vice-president in Ghana claimed credit for positive outcomes during campaigns. Using data from the US, Grimmer, Westwood, and Messing (2014) and Grimmer (2013) showed that politicians can create a "impression of influence" by publicly claiming credit for programmatic spending. In this regard, Grimmer, Messing, and Westwood (2012) showed that the monetary value of policy and projects is less important than the number of credit claiming messages a politician can send to voters. Cruz and Schneider (2017) studied a CDD program adopted and – to a large extent – implemented by the central government. The paper indicated that local mayors strategically used information asymmetries on the part of voters and undeservedly claimed credit for the policy. However, there are also some counterexamples where incumbents were not able to claim credit. Studying cash transfers in Brazil, Frey (2019) showed that local mayors could not effectively claim credit and receive electoral rewards. Similarly, Imai, King, and Rivera (2020a) studied a cash transfer program in Mexico. They argued that incumbents could not claim credit for the policy because all parties supported the adoption of the program, leading to null results.

In sum, it seems clear from the literature that incumbents try to claim credit for public goods policies to influence voter attribution for public goods provision. What is less clear are the conditions under which credit claiming is effective. Also, the previous literature did not consider (to a large part) how clarity of responsibility interacts with credit claiming. On the one hand, the literature suggests that low clarity of responsibility should lead to less incumbent voting. On the other hand, low clarity of responsibility should increase incentives for incumbents to claim credit because voters are unable to verify their actions, leading to more incumbent voting.

### Policy Instrument Design

A closely related literature suggests that institutional context and the design of policy instruments can influence voter attribution. In this regard, Layton and Smith (2015) showed that the politicization of a welfare policy can increase its electoral effects. In a recent review of the literature on the electoral effects of CCTs, Imai, King, and Rivera (2020b) conjecture that the role of politicians or parties in (1) policy adoption and (2) implementation could influence voting behavior, but they do not test either mechanism. Larreguy, Marshall, and Trucco (2018) argue that the federal government party was able to successfully claim credit for a public goods policy because it administered the policy. By contrast, local incumbents were not able to capitalize on the program because they were not involved in the program administration. Relatedly, De Kadt and Lieberman (2017) argue that voters who received better public services also witnessed increased corruption during policy implementation, leading to lower support for incumbents. In sum, there is reason to believe that an incumbent's role in policy implementation and adoption can influence voter attributions. However, to date, we lack direct empirical evidence on this mechanism.

## 1.4 Summary and Open Questions

Returning to the overarching question of the dissertation: do voters reward incumbents for public goods provision? Taken together, what can we learn from the state of the field to answer this question and what gaps exist in the literature? The theoretical literature on electoral accountability typically serves as a starting point for most studies in the field. The theory predicts that voters value public goods provision, are able to observe a performance signal (policy effort and/or outcome), update their expectations about the quality of candidates on the basis of the performance signal, and elect them if their performance exceeds a certain threshold. The empirical literature on the question has developed fairly recently and, so far, has provided largely mixed evidence on the average treatment effects. Using a meta-analysis, I found a positive cumulative average effect of public goods provision on incumbent voting that was statistically significant. Nevertheless, the many null and negative effects found in many individual studies demanded further exploration.

Reviewing the literature, I point to several mechanisms to explain the mixed findings. What becomes clear from previous research is that we have to take the informational, institutional, and inferential constraints that voters face into account. First, a large literature argues that voters might simply lack access to information about public services and therefore do not reward incumbents. In this regard, the empirical literature has established that information about performance is indeed a necessary, but not sufficient, condition to induce performance voting. Second, the literature established the importance of voters' underlying preferences and beliefs. The empirical review showed that voters strongly and positively react to information about incumbent public goods provision in hypothetical conjoint experiments. However,

and in line with the sub-literature on credible commitment, voters react considerably less to the promises of politicians about public services. We have less evidence on how voters value policy efforts to improve public goods provision. Third, beyond the lack of performance signals, the recent literature has established that voter attribution can mediate the effect of performance signals on electoral outcomes. In particular, previous research found that low clarity of responsibility may reduce the effect of public goods provision on incumbent voting, while credit claiming by incumbents might lead to an increased effect. We have much less evidence on what could cause negative effects of public goods provision. Some accounts conjecture that policy implementation could reveal information about the incumbent, but there is no direct empirical evidence on this mechanism. In this regard, it is also unclear under what conditions credit claiming is effective. Overall, I argue that the literature has paid too little attention to voter expectations about the effectiveness of public goods policies and how the design of policy instruments influences attributability and performance voting.

**(Q1) What expectations do voters hold about the effectiveness of public goods policies and does this shape incumbent support?**

First, as we saw in the literature review, studies typically measure voter preferences for effective public goods policies or promises by politicians. However, I argue that in many contexts public goods policies need repeated investment and benefits only materialize over a long period of time (Williams, 2017) or remain unobservable or less salient to voters. Put differently, in many situations voters might observe the efforts of incumbents to implement a policy but lack information as to whether these efforts were actually successful. In these situations, voters' expectations about the effectiveness of public goods are important. Voters might have a positive preference for effective public goods provision but not reward public goods policies if they are pessimistic about their effectiveness. However, so far we lack direct evidence as to whether voters have different expectations about the effectiveness of public goods policies compared to private transfer policies.

**(Q2) Do adverse economic shocks lead voters to reward private goods over public goods?**

A main prediction from the theoretical literature on clientelism is that voters' preferences for public and private goods provision should vary according to income levels (Dixit and Londregan, 1996; Bardhan and Mookherjee, 2012). Put differently, poverty, i.e., income levels, should be associated with more or less demand for clientelistic or public goods (Dixit and Londregan, 1996; Bardhan and Mookherjee, 2012). However, we saw from the literature review that voters in low-income democracies value public goods provision. Nevertheless, we do not know how sensitive these preferences are to income shocks. Bobonis et al. (2017) showed that increased access to water reduced demand for private goods from politicians. Similarly, Blattman, Emeriau, and Fiala (2018) have shown that a positive economic shock due to welfare policy can make voters less dependent on clientelistic goods and less receptive to vote buying. If negative shocks induce the opposite effect – a demand for private goods at the expense of public goods – that could help to explain why voters sometimes fail to reward even seemingly effective public goods provision. However, we do not have evidence as

to whether the reverse also holds: do adverse economic shocks increase dependencies and lead voters to favor short-term, particularistic solutions over public goods and thereby potentially increase dependence on clientelism? Is it possible that voters' marginal utility from income is not only sensitive to absolute changes in income (poverty) but also to relative changes in income (negative shocks)?

**(Q3) What makes policies attributable and how does this influence performance voting?**

We have evidence that suggests that visibility of policy outcomes, clarity of responsibility, and credit claiming by incumbents are important in shaping attribution. However, these sub-literatures are not well integrated. While the importance of clarity of responsibility and credit claiming is well established in the literature, their interaction has not been studied. In this regard, it is particularly interesting as to how different roles during policy implementation (and adoption) may shape clarity of responsibility, which could in turn influence the credit claiming opportunities of politicians and the observability of policy efforts by voters.

*(Q3a) How can clarity of responsibility during implementation influence voter attribution?* In particular, it would be important to explore if low clarity of responsibility can foster credit claiming and if high clarity of responsibility could prevent underserved credit claiming by making policy efforts visible to voters. This could also answer the question as to when credit claiming is more or less effective in gaining votes. Given that politicians have an incentive to claim credit for public policies that enhance voter welfare and/or that signal ability, why do voters reward them differently? Importantly, we do not have any empirical evidence on the variation of credit claiming opportunities for the exogenous provision of public goods. Conceptually, recent studies have often operationalized clarity of responsibility with respect to the visibility of different types of public goods, assuming that responsibility in their creation is more or less clear to voters. However, it would be important to study clarity of responsibility in terms of the institutional design of the policy and the extent to which voters can observe incumbents' actions during policy implementation and/or adoption. While previous research derived some theoretical predictions about the influence of policy design on vote attribution and voting, we still lack empirical evidence. To study this question, the ideal research design would not only randomly induce some variation in public goods outcomes but also variation in the roles of incumbents in policy implementation, inducing differences in clarity of responsibility and subsequently measuring performance voting.

*(Q3b) How do performance outcomes shape voting behavior in settings of multi-level responsibility?* As mentioned above, the literature on the issue is divided. One line of argument suggests that it is more difficult for voters to attribute responsibility to supranational institutions like the EU because they do not connect local outcomes with the EU. Similarly, research on EU referenda has produced mixed evidence. Additionally, most research has used high levels of aggregation. However, many EU policies are typically implemented at the local level (by the municipality). Therefore, it is an open question as to whether findings from the regional and national level are replicated at the local level.

## 1.5 The Papers in Brief

The three papers that constitute this dissertation deal with different aspects of the questions posed. The first paper studies voter preferences and expectations for public and private goods provision. The second then explores how responsibilities during policy implementation shape voter attribution and electoral rewards for incumbents. The third paper explores how local economic outcomes influence voting in contexts where multiple actors are involved in policy adoption and implementation.

### 1.5.1 The Empirical Approach

A fundamental challenge is to identify and estimate the causal effect of a political variable of interest on an outcome (Neyman, 1923; Fisher, 1925; Fisher, 1935; Rubin, 1974). The last two decades have seen an increased use of experiments to identify average causal effects of numerous political treatments on various outcomes. While experiments are a powerful tool to identify average causal effects, this dissertation is also interested in moderating and mediating mechanisms. Given the multitude of moderating and mediating variables that would need to be manipulated, an appropriate experimental design – that is not unpowered – is difficult to envision. Therefore, this dissertation adopts a *causal mixed-method approach* (Humphreys and Jacobs, 2015) that is grounded in the potential outcome framework but uses evidence from survey data, survey experiments, observational voting data, qualitative interviews, as well as field experimental data to make inferences about the underlying data generating process.

### 1.5.2 Cases and Scope Conditions

Next, I define the set of environmental and individual conditions that make up the scope conditions of the arguments, i.e., those conditions under which I expect the theoretical mechanisms to be evident. First, I study three types of performance signals in three different countries (Malawi, the Philippines, and Greece). In Paper II, I focus on public goods provision in terms of welfare outcomes and observable efforts by politicians. Paper I, on the other hand, focuses on a particular type of public good (disaster prevention) in contrast to private transfers (disaster relief). Paper III uses local economic outcomes and public goods provision as two indicators of performance. While I focus on public goods, I assume that all three performance measures are positive signals for voters about incumbent type. Second, all three cases consider settings in which public goods provision is – at least partly – decentralized and multiple actors are involved in their provision. Third, both Malawi and The Philippines often lack a sufficient information environment for voters, with a weak civil society and a biased media (Campos and Hellman, 2005; Wiseman, 2000). While the general information environment is better in Greece, responsibilities for local economic outcomes were hard to evaluate. Fourth, under these conditions, identity cues are likely to have a strong influence on vote choice. Therefore, I control for the influence of political parties and

ethnicity by either holding them constant (in the case of ethnicity in the survey experiment in Malawi or party cues in Greece) or control for them via randomization (as in the case of the natural field experiment in the Philippines). Fifth, according to the dominant theories of redistributive politics (Dixit and Londregan, 1996), economic development is an important moderating variable for the effect of public goods provision on incumbent voting: as economic development increases, the relative efficiency of clientelism vis-à-vis a more programmatic provision of goods decreases. Thus, the variation in economic development across settings creates a prediction about the likelihood of observing performance voting in the three settings: public good appeals are less likely to persuade low- and middle-income voters (Malawi, Philippines) and more likely to persuade high-income voters (Greece). In this sense, the Greek case can be viewed as the most likely in which to observe electoral effects for local performance. Another likely moderator is low state capacity with which to effectively implement public policies. In this regard, the Greek case can be viewed as an outlier.

### 1.5.3 The Papers

#### **(Paper I) Do Voters Reward Prevention? Evidence from Disaster Policies in Malawi**

In Hartmann (2022a) the dissertation first seeks to establish if voters have pessimistic expectations about public goods policy efforts. The paper is motivated by observational evidence that suggests that incumbents receive electoral rewards for individual relief spending but not for public prevention spending (Healy and Malhotra, 2009; Gallego, 2018; Cavalcanti, 2018). While the research question has received considerable attention, previous research could not establish if observed patterns are really driven by underlying preferences by voters. That is, do voters prefer private relief over public prevention policies? I propose a theory whereby voters are motivated by welfare gains and rely on their prior expectations to judge whether the policy effort will result in welfare gains. The model predicts that voters will be more likely to support relief policies over prevention policies if they hold the prior expectation that prevention policies are less effective than relief policies. As we saw in the review, a theoretical literature in comparative politics predicts that pre-electoral promises to deliver public goods are not credible because voters do not trust them (Keefer and Vlaicu, 2008). The paper extends this argument to post election policy efforts and argues that voters have pessimistic expectations about the welfare benefits of public goods policies. The theory also suggests that voter preferences are subject to change because negative economic shocks can increase the marginal utility of income and make voters more likely to support candidates who provide private goods.

The paper explores these questions through the lens of natural disaster policies in Malawi, where politicians can either invest in public prevention (public goods) or relief transfers (private goods). I find that voters value political efforts to implement relief policies over efforts to implement prevention policies when their effectiveness is uncertain. When prevention policies are shown to be effective, voters value them similar to effective relief policies. However, even if prevention is shown to be effective, respondents who

suffered economic losses are more likely to prefer candidates who provide effective relief. Empirically, it is challenging to disentangle voter preferences relating to natural disaster policies. We usually do not know what information about the probability of disasters, disaster policies, and the performance of politicians voters had access to when making their decision. I overcome these challenges using a conjoint experiment in rural Malawi, in which participants chose between two hypothetical candidates with randomly varying attributes about prevention and relief policies. To study the importance of voter expectations, the survey experiment separated incumbent performance into two different sets of information treatments, one about policy efforts and another about policy outcomes. By varying the uncertainty surrounding the effectiveness of different policies (prevention and relief), the study can evaluate support for the different policies given that voters are certain or uncertain as to whether a particular policy is effective in changing outcomes.

From the perspective of electoral accountability for public goods provision, the findings demonstrate the importance of effective policy implementation. Conversely, they also suggest how voters can get stuck in an electoral equilibrium in which they are less likely to reward politicians' efforts to invest in public goods policies because of pessimistic expectations about their effectiveness. While citizens may hold ex-ante positive preferences for public goods, failures to deliver these goods shape citizens' expectations, leading to lower demand for public goods policies. In turn, this might weaken incentives for politicians to implement public goods policies. Another key finding is also that voters will reward effective policy implementation if they have the chance to observe it. However, this does not hold for all voters equally. Those voters who experienced a negative economic shock are less likely to reward effective public goods provision. This suggests that a low public goods equilibrium may be sustained by negative economic shocks.

### **(Paper II) The Politics of Implementation: When Does Public Goods Provision Influence Incumbent Voting?**

In Hartmann (2022b) the dissertation seeks to identify how the design of policy instruments can shape voter attributions and incumbent voting. This paper shows that the nature of responsibilities during policy implementation can reveal incumbent's efforts or give officials an opportunity to claim credit and thereby influence voting behavior. I test this theory in the Philippines, leveraging the random assignment of a public goods program with different roles of local politicians during implementation.

The argument is as follows. Many public good policies are adopted by the central government and implemented through its ministry. However, often they leave some political decision-making power to support implementation to local government. Typically, voters are imperfectly informed about the exact responsibilities of incumbents. Under these conditions, responsibilities during implementation, even if they are marginal, can give incumbents a cheap opportunity to credibly claim credit for policy efforts or outcomes or make efforts visible to voters. Which of these two channels dominates

TABLE 1.2: Overview of the papers in the dissertation

Paper	Research Question	Mechanism	Method	Main Findings
I	Do voters prefer short-term private relief over public prevention?	Voters expect that public prevention policies are less effective than relief policies	Survey Experiment	Voters prefer private relief over public prevention policies if their effectiveness is uncertain; once prevention is shown to be effective, voters value it similar to effective relief
I		Income losses induce preferences for short term payoffs	Observational Data	Individuals who experienced economic losses are more likely to prefer candidates who provide effective short-term private goods
II	How does policy design affect incumbent voting?	The inclusion of local politicians in implementation is a credible signal for voters and will influence voting behavior	Natural Field Experiment <sup>a</sup>	Only incumbents who are included in policy implementation see electoral effects
II		High (Low) clarity of responsibility during policy implementation induces performance (credit claim) voting	Qualitative Interviews, Observational Data	If responsibilities are clear to voters, incumbents receive electoral benefits depending on their performance (efforts + outcome); if responsibilities are not clear to voters, incumbents receive electoral benefits regardless of outcomes
III	Can local economic losses influence incumbent voting in settings of multi-level responsibility?	Voters attribute local economic losses to the EU	Observational Data	Local economic conditions can shape voting for supranational institutions in contexts where responsibilities are unclear but the incumbent (EU) is linked to policy adoption

<sup>a</sup>In particular, the paper makes use of a randomized third-party experiment in which treatment assignment was probabilistic, designed and controlled by a third party, but is known to the researcher (Titiunik, 2020).

depends on the voters' ability to observe politicians efforts and attribute outcomes, i.e., the clarity of responsibility. When responsibilities are clear, politicians have an incentive to exert effort and produce good outcomes because voters can observe their actions, verify their credit claims, and vote according to incumbent performance. When responsibilities are unclear, politicians have an incentive to claim credit regardless of their efforts, and voters are less able to distinguish reports about efforts from opportunistic credit claiming or lucky circumstances. As a result, voters will reward incumbents for mere reporting of actions. Thus, the net electoral effect of an exogenous public goods policy depends on (a) the opportunity for incumbents to signal their quality during policy implementation and (b) on the clarity of their responsibilities. Both factors jointly determine politicians' credit claiming opportunities and the quality of the performance signal voters receive and can thereby undermine or enhance electoral accountability.

I test these predictions using a large-scale natural field experiment in the Philippines. Typically, previous studies relied on the random or quasi-random assignment of a policy to a political unit (district, municipalities) and measured the effect on election outcomes. However, these designs can often not disentangle whether the treatment effects are driven by the policy as such (possibly as a signal for competence), the implementation of the policy (revealing policy efforts, credit claiming by politicians), or some welfare outcome (income, community welfare) that voters attribute to the actions of politicians. The paper addresses a key empirical challenge: separating policy, implementation, and outcomes. Compared to previous papers in the literature, it not only uses a random assignment of a public goods policy, but it also differentiates between different roles of politicians during implementation, in particular, incumbents' observable efforts, as well as public goods outcomes. To test the importance of policy implementation, I made use of the fact that different politicians had different responsibilities during implementation. In line with the predictions, citizens only adjusted their voting behavior for incumbents involved in implementation. When responsibilities were clear and incumbents' efforts were observable, voters rewarded or punished officials according to their efforts and the outcomes. When responsibilities were unclear and incumbents' efforts unobservable, voters rewarded incumbents regardless of welfare outcomes. The evidence is consistent with credit claim voting when responsibilities were unclear and performance voting if responsibilities were clear. This interpretation is supported by qualitative interviews with local officials and citizens. Together, the results illustrate the importance of the implementation process and provide one explanation for the mixed findings in the literature.

The paper integrates the sub-literatures on clarity of responsibility and credit claiming during policy implementation into a framework of electoral accountability. Previous literature has argued that a lack of clarity of responsibility for outcomes can weaken incumbent voting. I argue that low clarity of responsibility can also enable subsequent credit claiming and increase incumbent voting. However, if incumbent politicians have no role during implementation they lack the opportunity to align themselves with the policy. If incumbents have an unclear role during implementation, credit claiming is an effective strategy for incumbents to gain votes because voters cannot

verify their claims. This could, however, undermine electoral accountability if voters do not learn anything about the actual quality of incumbents. When responsibilities are clear, voters receive an accurate signal about the quality of incumbents. However, this is a less effective strategy for incumbents to gain votes because voters can observe bad performance and punish incumbents accordingly.

### **(Paper III) Economic Downturns and the Greek Referendum 2015: Evidence using Night-Time Light Data**

In Xezonakis and Hartmann (2020), we consider how performance outcomes determine vote choice in a setting with multilevel responsibilities. In particular, we consider how local economic conditions can influence incumbent voting for an international organization (the EU) in the context of the 2015 bailout referendum in the aftermath of the financial crisis. In terms of context, the paper is not as closely aligned with the overarching topic of the dissertation as the two previous ones. However, the crisis represented the most critical policy issue among Greek voters of the last decade and, consequently, the EU's effectiveness at addressing adverse economic effects is a key performance metric. The EU also had a prominent role in Greece adopting austerity policies in response to the financial crisis. However, it was, and still is, heavily debated whether the austerity policy had a positive or negative impact on the local economy (Bansak, Bechtel, and Margalit, 2021). We can therefore study the effect of local performance outcomes (local economic conditions) under conditions in which voters had a clear signal of policy adoption but the exact link between public policy and local outcomes remained unclear to voters. We found a significant association between economic conditions and public service outcomes at the local level and a no-vote in the referendum.

Unlike the two previous papers, the outcome of the study is not a preference or vote choice for an incumbent *per se*. Instead, the study evaluates voting for an international organization (the EU) in the context of a referendum. However, the vote in the referendum was framed not only around the acceptance of the Greek bailout, but also as support for the EU in general. Thus, the Greek referendum could have also resulted in an exit of Greece from the Eurozone or EU. Put differently, the incumbent was the EU. Therefore, one can also think of the vote in the referendum as a type of incumbent voting. However, theoretically, it is ambiguous as to whether voters reward or blame international actors in a similar way to local or national incumbents. Therefore, it is theoretically not clear if past performance (economic or public goods provision) informs the decision of voters. Nevertheless, the study is still informative for the overall question of the dissertation because the scope conditions (high levels of uncertainty about responsibility for outcomes, no parties or ethnic identities) are given or, as in the case of party cues, are controlled for in the research design.

Drawing on novel satellite data to proxy local economic changes before and after the crisis, census data on public goods provision after the crisis, and electoral data from 2015, we document empirical support for the prediction that voters punished the EU for economic outcomes leading up to the election. In appendix A.3, I extend the analysis to local public goods and find that the

same patterns hold. If incumbents had a role in policy adoption, but the exact mapping from policy action to local outcomes was unclear, voters used local outcomes to make an inference about quality and punished incumbents for negative outcomes. This is also true for supranational actors such as the EU.

## 1.6 Summary and Implications

Taken together, what can we learn from these three papers? What do these results mean for the inference of voters and the incentives for politicians in relation to public goods provision? Existing work has identified clear evidence on the direct effect of public goods provision on voting as well as important moderating and mediating variable. However, it has struggled to impose a clear theoretical framework. This dissertation shows that voters want effective public goods provision and reward it if given the chance, even in contexts where clientelism and vote buying is widespread. However, the results also suggest that societies can be trapped in an equilibrium in which voters do not reward public goods provision because they have pessimistic expectations about the effectiveness of public goods policies and are not able to attribute public goods outcomes to the efforts of their representatives.

My research suggests that low electoral rewards for public goods provision can reflect pessimistic voter expectations about effectiveness. Consequently, citizens will be less likely to reward incumbents because they expect the policy will not result in welfare returns. This problem is of specific importance for local public goods that require long-term investment and where benefits only materialize in the future. This could have far-reaching consequences if this equilibrium is self-fulfilling: anticipating that voters will not reward public goods policies if their effectiveness is uncertain, politicians are less likely to adopt such policies in the first place, thereby preventing voters from learning about successful public goods policies which may reinforce these pessimistic expectations. I also found suggestive evidence that a low public goods equilibrium may be sustained by adverse economic shocks. In particular, I was able to show that voters that recently experienced economic hardship (in this case due to a flood disaster) are more likely to reward candidates who provide private transfers and increase forgiveness for candidates who offer particularistic goods.

My research points to the central importance of policy adoption and implementation in influencing the attributability of public goods provision. The reason is that voters interpret the signals they receive from incumbents during implementation as credible and update their beliefs about incumbent quality. I further found that policy design can influence voter attribution by affecting voters' ability to distinguish credit claims from actual performance signals. The clarity of responsibility during policy implementation determines whether signals correspond to performance or are merely credit claims. When responsibilities are clear, voters are able to observe and attribute the effort of incumbents. As a consequence, voters are able to reward them according to their efforts and the outcomes. However, when responsibilities are not clear to voters, incumbents have an incentive to claim credit for positive outcomes and efforts regardless of their actual actions because

voters are not able to verify these claims. As a consequence, voters reward incumbents for the mere reporting of actions. Thus, the effect of public goods provision on incumbent voting depends on (a) the opportunity of incumbents to signal their quality during policy implementation and (b) on the clarity of their responsibilities during implementation. Both factors jointly determine politicians' credit claiming opportunities and the quality of the performance signal voters receive and can thereby undermine or enhance electoral accountability.

The findings speak to some theoretical results from Mani and Mukand (2007), who predicted that politicians would allocate resources towards those public goods where their efforts are more visible. However, my findings show that politicians might not have such incentives if there is a risk that their efforts are not successful. Politicians have a strong incentive to remain vague about their responsibilities during implementation, because they risk getting punished if they do not deliver. Credit claiming seems to be a more effective strategy to gain votes, irrespective of welfare outcomes, as long as the exact responsibilities of politicians remain vague. Thus, career-oriented politicians may face weak incentives to adopt verifiable policies when they cannot expect to claim credit for them and/or when they are uncertain if the policies will be effective. The results also suggest that attributability and accountability do not always go hand in hand. Credit claiming can increase attributability when exact responsibilities are unclear, but might reduce accountability if credit claims are underserved. Thus the dissertation stresses the need to design policy instruments that increase both attributability and accountability. However, given the potential electoral risk of such policies, private transfer – also in the form of clientelism – might still be the cost-effective strategy for politicians. Thus, politicians may be more likely to target resources toward those policies. This potential skew may lead to a further under-provision of public goods.

### 1.6.1 A Note on External and Internal Validity

This dissertation also has important limitations. First, the primary parameter of interest in each study is some type of sample of an average treatment effect. At the outset, I do not assume that the treatment effects travel across contexts. However, under what conditions could the findings be translated to other populations? In many applications this problem is referred to as *external validity* or *generalizability*. As noted by Pearl and Bareinboim (2014), issues of external validity may arise from different (1) populations, (2) sampling procedures, (3) experimental conditions, (4) treatment assignments, (5) and unmeasured variables that moderate or mediate the effects. One could also add (6) the measurement of the treatment, outcomes, and moderating variables.

First, the dissertation uses three cases to study voting behavior in low-income (Malawi), middle-income (Philippines), and high-income contexts (Greece). However, neither the subjects (individuals for the first paper and municipalities for the other two) have been selected randomly. Thus, we have three different populations of interest that vary on a host of moderating variables. Second, two out of the three studies rely on random samples

TABLE 1.3: External Validity

Population	Sampling Procedures	Experimental Conditions	Treatment Assignments	Moderator, Mediator
Malawi	Self-selection: flood affected areas	Prevention & Relief Policies	Random	Frequent disaster, low state capacity, low income, widespread clientelism
Philippines	Self-selection: low- and middle-income municipalities	CDD-policy & different responsibilities	Random and Observational	Low state capacity, dynastic politics, widespread clientelism, low information environment
Greece	All municipalities	Economic losses, Public goods provision	Self-selection	Public goods provision

that might not be representative of the underlying population. It is also not obvious exactly how the preferences in the survey experiment (Paper I) correspond to real-world behavior (this issue is further discussed in the paper). Paper I also studies a context that is frequently hit by disasters, so there is little uncertainty that a disaster will occur. Therefore, it is not clear if these results will travel to a context in which individuals rarely suffer from disasters. Another limitation arises from the fact that some treatment assignments were not randomized. The economic shock in Paper I was not randomly assigned, although it did have, arguably, a random component to it. The measure of the economic shock is also self-reported. While the public goods program in Paper II was randomly assigned, a major limitation is that the different responsibilities during policy implementation were not randomly assigned. Instead they covary with different political offices. Future studies should thus randomly assign public goods policies and randomly vary the clarity of responsibility during policy implementation. A limitation of Xezonakis and Hartmann (2020) is that the main performance treatment (local economic development) is not randomized. There is also no variation on policy adoption.

### 1.6.2 Future Research

The dissertation also raises interesting issues that will inform my future research.

#### Identifying sources for voters' pessimistic expectations

First, future research has to consider why voters are more uncertain about the effectiveness of public goods policies. My research has revealed that preferences are structured by the beliefs and expectations of voters. From these findings, it is not clear whether voters do not believe a candidate will implement the promised public goods policy (because of corruption or inability) in

the first place or if they think that he/she is not able to (because of a lack of capacity or corrupt system). Both would lead to lower support rates. Thus, one open question that warrants further exploration relates to which beliefs are salient. These beliefs might be shaped by previous encounters with the state and the effectiveness of public goods provision. The next step would be to study policy interventions that can help to overcome these pessimistic beliefs.

### **Trade-offs between types of public goods**

Another task for future research is to identify the trade-offs and inferences voters engage in when deciding to elect candidates for public goods provision. What trade-offs are voters willing to make between public goods and private transfers and between different public goods? On a theoretical level, most theories of electoral accountability assume a unidimensional policy space (for example, public goods provision or corruption). Paper I has identified voter preferences for different types of private and public goods. Recent empirical findings from Boas, Hidalgo, and Toral (2021) also suggest that not all performance characteristics are positively correlated. It is an open question as to how voters aggregate these multidimensional policy preferences and how this shapes accountability. One specific question that emerges from the paper on Greek municipalities is how voters trade-off economic performance and public goods provision. So far, I could only show that both are significant predictors for vote choice, but I was not able to say anything about the relative size of the effect.

### **Integrating and accumulating knowledge**

In a current project, I explore how to accumulate the evidence presented in the literature review using a formal meta-analysis. Ideally, this could be extended by combining quantitative and qualitative data along the lines of Humphreys and Jacobs (2015), as well as formally combining the experimental, quasi experimental, and observational studies as proposed by Athey, Chetty, and Imbens (2020). In a current project, I also extend the meta-analysis by making the causal model explicit and specifying the relation between several prominent moderators and mediators.

### **Are incentives for public goods provision sufficient?**

In the broader sense, the dissertation can also be informative in relation to the incentives for politicians to engage in programmatic reforms. The research informs the discussion on voter demand for the political transition from clientelistic to public service politics. However, the dissertation does not address whether the electoral returns of public goods outweigh the returns of clientelistic goods. If low returns to public goods constitute an electoral equilibrium in a game between voters and politicians, some aspect of the game (actors, strategies, information sets, or payoffs) has to change if public goods provision is to be increased. One line of research is to inform politicians about the underlying positive preferences of voters.

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# A Appendix

## A.1 Meta-Analysis

The setup of the meta-analysis largely follows that of Blair, Christensen, and Rudkin (2021). The replication code and data will be made available under: <https://github.com/HartmannFelix>.

### A.1.1 Google Scholar Search

I used Google Scholar and ran queries using a combination of different terms: public services OR public goods OR service provision AND incumbent voting OR electoral outcomes OR election outcomes. The search was conducted on December 1st 2021 and resulted in 82,500 findings. Whenever a paper matched the substantive and design criteria below, I used Google Scholar to search all papers citing the paper.

### A.1.2 Substantive Filter: Context and Topic

I restricted the sample of studies to empirical papers written in English using sub-national data. I included working papers and peer reviewed articles. To ensure that the studies are comparable, the sample only included papers that study the same theoretical mechanism, i.e., the effect of public goods (policy, spending or outcome) on incumbent voting in developing democracies. Therefore, I subset studies to countries where elections are frequently held but clientelism and vote buying remain wide-spread.

### A.1.3 Research Design Filter

First, this meta-analysis is concerned with the causal relationship between public goods provision and incumbent voting, i.e., the mechanism of interest. Therefore, the sample of studies is restricted to those which try to identify a causal estimand using experiments or natural experiments. For example, natural experiments may rely on two-way (sub-national unit, election-year) fixed effects, first differences or difference-in-differences designs.

### A.1.4 Rules for Selecting among Specifications

- Estimands: if a paper reports estimands for different types of public goods (such as education and healthcare spending) or different incumbents (national, local), I include all estimands

- Samples: if a study includes multiple geographical samples (villages, municipalities, districts), I report the results from all samples, but do not report subsets of a given sample (only competitive municipalities)
- Controls: in general, I select the specification that includes the most controls. If two-way fixed effects models, first differences or difference in difference designs include multiple periods, I select specifications with time-varying control variables
- Standard errors: if possible, I report robust standard errors
- Functional form: if possible, I report the estimates from linear regressions

### A.1.5 Extracting Data from the Studies

I collect the following data from the articles:

- Country: the country in which the study was conducted
- Type of study: field experiment or natural experiment
- Name: name of author(s)
- Year: the year in which the working paper or article was published
- Treatment type: (1) public goods spending, a (2) public goods policy, or (3) public goods outcomes
- Treatment subtype: education, healthcare, infrastructure, water, sanitation, refuse, land titling etc.
- Treatment measure: either binary (control vs. treatment) or continuous (share of public goods)
- Outcome type: the type of the incumbent (mayor, president, council member etc.) or party (local, presidential)
- Outcome measure: either binary (incumbent re-election) or continuous (incumbent vote share)
- Type of incumbent: president, mayor, party etc.

### A.1.6 Studies

1. Ajzenman and Durante (2019) studied the effect of the quality of public infrastructure on incumbent voting by leveraging the random assignment of voters to different public schools to cast their vote in Buenos Aires. The treatment variable was based on a survey ranking the infrastructure conditions of public schools from 1 to 4 (Very bad, Bad, Good, Very good). The paper aggregated this information into a binary indicator (0/1): Good (Very Good or Good) and Bad (Very bad or Bad) schools. The outcome was the vote share (0-1) of the incumbent mayor,

who was then running for president. The treatment category was the bad conditions. Since I am interested in the effect of good public goods provision I reverse the sign of the estimate. I report the specification without the interaction with the income indicator.

2. Araujo, Arretche, and Beramendi (2021) used a fuzzy regression discontinuity design (FRD) to study the effect of an electrification program in Brazil. The program was implemented in 2004 and the unit of analysis was municipalities. The treatment indicator was binary (0/1). A municipality was considered “treated” if fewer than 85% of households had access to electricity. The outcome was the vote share of the candidate aligned with the party implementing the policy (PT) in presidential elections. The outcome was measured using individual level survey data from 2006 and 2010 (scale: 0-1) and election outcomes in voting stations in rural areas between 2006 and 2018 (scale: 0-100). To be more consistent, I divided the estimates for voting stations by 100. I report all results for 2006 and 2010 using the linear specifications in Appendix F.
3. Boas, Hidalgo, and Toral (2021) used a natural experiment in Brazil to study the effect of meeting an educational quality target on the incumbent mayor’s vote share. Identification relied on a sharp regression discontinuity design. The authors showed that an increase in school quality reduced the vote share of the incumbent.
4. Bozcaga (2020) used district data from Turkey to study the effect of newly constructed education and health buildings on the ruling party’s (AKP) vote share (0-1). Identification relied on a triple diff-in-diff design. Estimation relied on district and year fixed effects. The main quantity of interest is an interaction between the measure of public goods provision and a measure of excludability. The paper defined excludability as the percentage of visitors to a district, and a low visitor share (high resident share) indicated high excludability. The paper does not report a specification of the unconditional marginal effects of education and health without interaction terms. This makes interpretation of the marginal effects of education and health difficult, because the coefficient captures the marginal effect of health and education on incumbent vote share when excludability is set at 0 (high visitor share, low resident). Therefore, I report the interactions effects. Once replication data becomes available, I will compute the marginal effects of education and health buildings on incumbent vote share without the interaction.
5. Croke (2021) used the staggered roll out of a policy that provided bed nets in Tanzania and found positive effects for several incumbents in subsequent evaluations in surveys.
6. Cruz and Schneider (2017) studied a community-driven development program in The Philippines that provided funding for public goods (roads, schools, healthcare) to municipalities. The study found that incumbent municipal mayors received positive electoral returns due to

the program, even though it was adopted and implemented by the central government. I re-analyzed the data using OLS in order to standardize estimates across studies. The substantive findings do not change.

7. De Kadt and Lieberman (2017) studied the local electoral effects of the provision of water, sanitation, and refuse in South Africa. The research design used a first-differences design and regressed the main dependent variable, the incumbent presidential party's (ANC) vote share at the ward level, on aggregated census data on the access to water, sanitation, and refuse services. The sample excluded wards in the top quintile of baseline services to rule out ceiling effects. I report results from the largest sample included in the study.
8. Garfias, Lopez-Videla, and Sandholtz (2021) studied infrastructure provision in Mexico between 2009–2011. The paper used two identification strategies. First, the random assignment of the infrastructure intervention between 2009 and 2011. The unit of analysis is the precinct. The treatment is the fraction of precinct study blocks that are treated. The outcome is precinct-level electoral results from municipal elections in 2012 and 2013. Estimation relied on a linear regression to estimate the ATE. Second, the paper used municipality and election year fixed effects in the subsequent role out of the program. The unit of analysis was the municipal-election year. The treatment was a binary indicator that takes the value of one if a municipality received the program. The outcome was the incumbent vote share at the municipal and federal level. Estimation relied on a difference-in-differences specification to estimate the ATT.
9. Goyal (2019) used a first-difference design to study the effect of a road provision policy in India on the change in vote share of the state-level incumbent party/coalition. The treatment was the change in percentage of roads connected within each state and national constituency in a given electoral period (0-100). The outcome was the change in vote share for the state and central government (-100 to 100).
10. Guiteras and Mobarak (2015) studied a health intervention in Bangladesh. The unit of analysis was the individual. Treatments were randomized at the village level and implemented at the neighborhood level. There were two main treatments in the study: (1) a community motivation campaign to raise awareness about sanitation issues as a community problem and (2) a combination of the information intervention and subsidies for the purchase of hygienic latrines. I report the combined treatment effect from the latter intervention arm. Outcomes were the stated satisfaction with the performance of local politicians (Union Parishad chairmen and Ward Members) in providing sanitation and in providing other goods and service (1-10 scale).
11. Habyarimana, Opalo, and Schipper (2021) use a difference-in-difference approach to study the effect of an education intervention in Tanzania.

12. Harding (2015) investigated the effect of changes in public goods provision (road conditions, primary schools) on the vote share of the incumbent presidential party in Ghana. The unit of analysis was the electoral area and the district. The research design used a first differences design with fine grained observational variation in changes to road conditions and changes in local elections results for the presidential party. Both the treatment and outcome variables have a scale of -100 to 100. I report the results for the effect of roads controlling for changes in wealth and the results for primary schools including all control variables. I do not include estimates for other school inputs because the variables seem to have different distributions (see the paper's supplementary material).
13. Johannessen (2019) studied the electoral effects of public goods spending on the vote share of incumbent mayors in Brazil. The unit of analysis was the municipality. Using a first differences design, the paper included several continuous measures of public goods spending: urbanization (beautification projects, road maintenance, trash collection), education (construction of schools, salaries of personnel and administration), health (construction of health centers, salaries of personnel and administration), capital purchases (all goods that a municipality purchases for permanent use, such as medical equipment, municipal vehicles, and public artwork). The treatments and outcome were measured in percentage (0-100). I do not report results for social assistance spending because this category includes the distribution of private goods (cash transfers). Additionally, I exclude free goods that include private goods (food, medicine, and textbooks that are distributed to citizens at no cost).
14. Larreguy, Marshall, and Trucco (2018) relied on detailed precinct voting data from Mexico and used a unit (precinct) and time (election year) fixed effects design to identify the effect of a land title reform on the vote share of municipal and federal incumbent parties. The treatment was the share of land titles in a given precinct and the outcome was the incumbent vote share (0-1). The authors included an additional specification where they interacted the main treatment (share of land titles in a given precinct) with the share of titling events affecting a precinct in which the current incumbent party was the federal incumbent when the title was bestowed.
15. Morier (2021a) studied the effect of transfers earmarked for public goods provision in Ghana. The unit of analysis was the district. The treatment variable was the log of transfers received from 2011–2015 (variation: 0.70 – 4.84). The outcome variables were the incumbent party's (NDC) vote share in the presidential elections in 2012 and 2016 (0-1) and the vote share of the incumbent local assembly members. Identification relied on two way fixed effects. Therefore, I report the specification that includes unit (district) and time (election year) fixed effects.
16. Morier (2021b) studied the effect of public goods funding (Urban Development Grant) in urbanized districts in Ghana. The unit of analysis was the district. The outcome variables were the incumbent president's

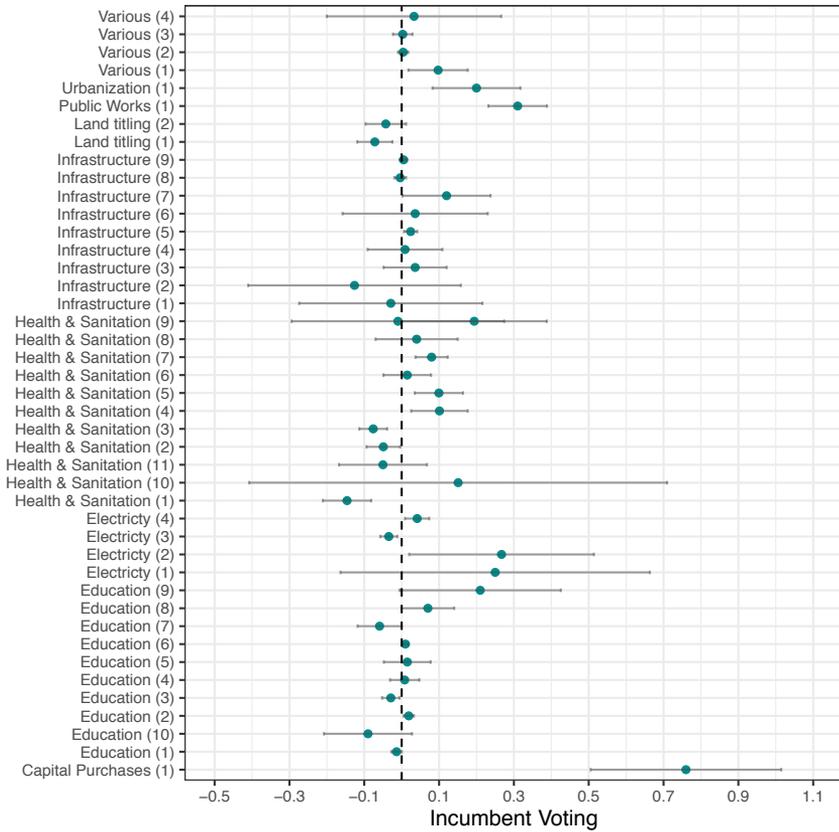
vote share from the 2008 election to the 2012 election (0-1) and the vote share of the local government incumbent. The identification strategy relied on the assumption of an as-if random treatment assign within a narrow bandwidth around the eligibility threshold of the policy. I report results from difference-in-differences analysis for the incumbent president (with 2008 as the pre-treatment period and in 2012 as the post- treatment period). The paper estimated a triple interaction between a binary variable for eligible districts, a dummy variable for districts above the eligibility threshold, and a dummy for the time period. I do not report results for the local incumbent because the paper does not include numerical results for the local incumbent (only a graphical representation).

17. Sandholtz (2019) used the randomized Liberian school reform in Liberia that improved teacher attendance and student test scores.
18. Springman (2021) studied the effects of the implementation of an NGO health intervention in Uganda. The unit of analysis was the individual. The binary treatment (0/1) was randomly assigned at the village level. The outcome variable came from a survey. I report results for the measure that is closest to incumbent voting; the general performance of the incumbent president. It was measured on an ordinal scale (Very dissatisfied; Dissatisfied; Neither satisfied nor dissatisfied; Satisfied; Very satisfied). I report the results from two samples: a smaller sample, in which random assignment was most likely ensured, and from a larger sample, in which random assignment was likely compromised.

### **A.1.7 Additional Results**

Figure A.1 depicts the average treatment effects for all included studies by type of good. We can observe similar level of effect sign heterogeneity across goods. Put differently, no type of public goods seems to have a universal positive or negative effect.

FIGURE A.1: Meta Analysis Results: Average Treatment Effect of Public Goods Provision on Incumbent Vote Share and 95% Confidence Intervals by Type of Good



## A.2 Conjoint Experiments

Conjoint experiments use properties from traditional factorial designs (Luce and Tukey, 1964) and combine them with insights from the recent literature on causal inference (Hainmueller, Hopkins, and Yamamoto, 2014). Typically, a conjoint experiment in the electoral context assigns multiple treatments (information about candidate performance) and measures an outcome (vote choice for the incumbent) embedded in a survey. The estimand obtained using this type of factorial experiment is typically the Average Marginal Component Effect, AMCE. This is the change in the probability that a candidate profile will be selected when the factor is at a given level (treatment) as compared to the baseline level (control), averaged over all other randomly assigned treatments. Consequently, effect sizes depend on the baseline category that the researcher employs and the joint distribution of the other treatment factors in the experiment. Conventionally, researchers employ a uniform distribution. For a detailed discussion on the latter point, see Cuesta et al. (2019). To compare studies, I restrict the sample to conjoint experiments with a clean control group (baseline) versus a public goods information treatment group and an outcome that measures vote choice (0, 1) for a hypothetical candidate. It formally excludes studies that have a control group (baseline) that includes information about a candidate.

### A.2.1 Studies

1. The earliest experiment considered in the review was conducted by Carlson (2015), who studied preferences for presidential candidates in rural villages in Uganda. The conjoint experiment included a factor for performance (provision of jobs, roads, health clinics) and campaign promises (about education, health care, jobs). However, the campaign promise treatment had no clean baseline but compared a promise of jobs/clinics (baseline) to a promise of better education (treatment). Another drawback of the study is that it does not differentiate between different performance records but collapses all categories (jobs, roads, health) into one dimension. While health clinics and roads are clear (local) public goods, public jobs could be distributed in a clientelistic fashion. The study found an insignificant positive effect for public goods promises and significant positive effects for public goods performance. Notably, the significant positive effect of prior performance disappears if an interaction between co-ethnicity and performance is included in the model. The interaction itself is significant, indicating that the support for a co-ethnic candidate depends on their prior performance. These findings were replicated and sustained by Egami and Imai (2019).
2. Kao, Lust, and Rakner (2017) used a single profile conjoint in Malawi. As the control group (baseline), they provided information about a candidate who promised future particularistic goods. Compared to this control, voters were less likely to vote for candidates who promised immediate particularistic goods and more likely to vote for candidates who promised local public goods.

3. Similar to the previous study, Mares and Visconti (2020) included one dimension on programmatic campaign promises (improve local roads and school buildings) in their conjoint experiment in Romania. They found significant positive effects.
4. By contrast, Gutiérrez-Romero and LeBas (2020) found that a good programmatic performance record (reducing poverty) had no significant effect in Kenya.
5. Weaver (Forthcoming) studied mayoral candidates in Peru and included a treatment condition for incumbents with good programmatic performance (public works). The paper found positive effects for programmatic benefits. Notably, the baseline category (0) for the programmatic performance factor was a challenger running for office, and an incumbent with no performance information was the treatment condition (0.16). One of the paper's main empirical findings was that the challenger was always preferred to the incumbent regardless of good or bad performance. Taking -0.16 as the new baseline alters the point estimates for good programmatic performance (public works) from -0.10 to +0.06.
6. Phillips (2017) employed a conjoint experiment in the border region between Bihar and Jharkhand, India, and found a large positive effect of public policy performance (building roads).<sup>1</sup>

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<sup>1</sup>The paper does not make it entirely clear as to what type of baseline category was employed.

### A.3 Paper III: Extensions

I extend the paper further by introducing a measure of public goods provision and unemployment for the year 2011. I re-analyze the data from the article and include newly collected data on public goods provision and employment from the Greek Census 2011. The outcome in the paper is a binary choice: to agree or not agree with the proposed policy. However, one can also interpret this as a type of incumbent voting. We aggregated the average vote choice for each municipality and created a continuous measure (0-100) for the share of 'No' votes in a municipality. The treatment  $N\Delta$  was the change in economic activity within a municipality  $i$  comparing crisis years (2010 – 2013) and pre-crisis years (2004 – 2009) ( $N\Delta = \bar{E}_{2010:2013} - \bar{E}_{2004:2009}$ ). The paper showed that the Night-Time Light measure is predictive of business density within a municipality. On these grounds, one can interpret the NTL as a measure of the change in sociotropic well-being. Greece is also an advanced democracy with relatively high-income levels and a programmatic party system. Therefore, we controlled for party support. We also controlled for several variables that have been identified as key predictors of economic output and voting behavior, such as education.

The newly introduced measure of public goods is an index that considers the percentage of citizens in a municipality with access to sanitation and heating. The measurement of public goods provision is imperfect for several reasons. First, access to sanitation and heating is merely one narrow indicator of local public goods provision. A complete measure would consider access to healthcare, education, public (roads), or digital infrastructure (internet). Second, the timing of the measurement (2011) and the measurement of the outcome (voting behavior in the referendum in 2015) are four years apart.

The results are displayed in table A.1. As we can see in columns (2) and (3), the results remain stable to the inclusion of the additional control variable for public goods provision and unemployment within a municipality. The evidence casts doubt on the null hypothesis of no effect of economic hardship on the No-vote. Acknowledging these shortcomings, the paper showed that all three measures have an independent variation to predict a "No" vote choice. While not causally identified, this provides suggestive evidence that public goods are also predictive of vote choice in settings of multilevel responsibility.

TABLE A.1: OLS Regression Results: Outcome: Referendum  
"No" Voting 2015

	Original	With Public Goods	With Employment	Rest of Greece	Attica Region
NTL $\Delta$	-10.41*** (2.38)	-10.70*** (2.32)	-10.52*** (2.30)	-10.50*** (2.49)	-1.32 (5.22)
Public Goods 2011		-0.08*** (0.02)	-0.10*** (0.02)	-0.08*** (0.02)	-0.02 (0.03)
Employment 2011			-13.79* (6.11)	-8.87 (6.14)	-44.52*** (10.47)
Government party support 2015	0.76*** (0.04)	0.76*** (0.04)	0.77*** (0.04)	0.68*** (0.04)	0.84*** (0.06)
Euroceptic party support 2015	0.34*** (0.08)	0.45*** (0.08)	0.43*** (0.08)	0.27** (0.09)	0.73*** (0.12)
Education 2011	-0.46*** (0.05)	-0.39*** (0.05)	-0.33*** (0.05)	0.10 (0.08)	-0.29*** (0.06)
Population 2011	0.21 (0.25)	0.56* (0.25)	0.47 (0.26)	-0.32 (0.31)	-0.38 (0.22)
(Intercept)	28.91*** (2.50)	29.05*** (2.44)	41.53*** (6.04)	44.57*** (6.20)	63.13*** (9.22)
R <sup>2</sup>	0.73	0.75	0.78	0.71	0.98
Num. obs.	275	274	274	217	57

\*\*\*p < 0.001, \*\*p < 0.01, \*p < 0.05

Note: Outcome: Share of "No" votes within a municipality. Source of public goods and employment data: Census 2011, Hellenic Statistical Authority; Public Goods Index is calculated as the percentage of the population within a municipality with access to bathrooms, toilets, and heating; employment measures the share of employed people as a share of the economically active population within a municipality.

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